SUBMISSION

NDCCEEW REVIEW OF LONG DURATION STORAGE (PART 6 OF THE ELECTRICITY INFRASTRUCTURE INVESTMENT ACT 2020)

18 JUNE 2024

INTRODUCTION

The Energy Users' Association of Australia (EUAA) is the peak body representing Australian commercial and industrial energy users. Our membership covers a broad cross section of the Australian economy including significant retail, manufacturing, building materials and food processing industries. Combined our members employ over 1 million Australians, pay billions in energy bills every year and in many cases are exposed to the fluctuations and challenges of international trade.

Thank you for the opportunity to make a submission under *NDCCEEW's Review of Long Duration Storage (Part 6 of the Electricity Infrastructure Investment Act 2020* - EII Act) Consultation Paper (Consultation Paper).

The EUAA is a strong advocate for stable government policies that encourage investment without government unduly limiting technical capability or capacity. The current Consultation Paper combined with the Consumer Advocate's and NDCCEEW's interpretation of the EII Act are creating an environment of sovereign risk, discouraging investors and limiting technical capability of the NSW storage system.

The EUAA understands that the EII Act requires an additional 2GW and 16GWh of long duration storage (in addition to Snowy 2.0) by 2030, and that the NSW government is currently not on-track to achieve this outcome, even though it has 3.4GW of minimum 2-hour dispatch capacity either committed or anticipated. The EII Act, through stating 2GW and 16GWh, implies that the 2GW needs to be limited to release its capacity over 8h to achieve the requirement. NDCEEW have expressed their interest in changing the EII Act to 8GWh (i.e. 4-hours) with justification provided by new modelling that differs from all existing modelling.

While we agree with the 2GW and 16GWh requirement by 2030, it appears that the Consumer Advocate and NDCCEEW are proposing to apply technical limits to storage investments in order to achieve the EII Act requisite targets, without considering the flexibility and technical limitations of the proposal, which can be dealt with contractually rather than creating market uncertainty through changing the rules.

By virtue of the configuration of, for example, 2GW of 4GWh storage, this 2GW capacity can also be 2GW of 16GWh (by slowing the release of electricity) and will be drawn on as the market conditions require. Whether the market requires the full 2GW capacity over 2 hours, 4 hours, 8 hours or longer, this configuration allows the flexibility of the storage systems to respond to the market needs, while being able to re-charge at the faster rate.

We do however recognise that the market encourages storage participants to discharge at the fastest rate possible. This is because, unlike generators who operate on the basis of average revenue being above long run marginal cost, storage usually operate on the basis of margins, i.e. at its simplest, the difference between the price paid for the

electricity during charging and the price obtained when selling to the market. Batteries, in particular, have a limited number of cycles before replacement is required, thus the margin for batteries also includes a "cost per cycle", i.e. at its simplest, the CAPEX of each cell of a battery divided by the expected number of cycles before requiring replacement.

The Consultation Paper also implies that 4-hour storage has the best net benefit to consumers due to a lower CAPEX cost and that consumers will be funding excess capacity in either GW or GWh if the wrong type of storage is constructed. We disagree with these conclusions in the Consultation Report. Firstly, the CAPEX is primarily driven by the number and type of inverters that are installed. Having more inverters may cost more, but allows flexibility in how the storage operates which improves consumer benefits, secondly the modelling assumes that the storage device charges and discharges at its maximum capacity, which is not necessarily the case, and lastly consumers will pay for storage as it is dispatched into the NEM at the market competitive price based on the margin.

Limiting the discharge and therefore the recharge rate means that if a battery fully discharged during yesterday's peak, it may not be full again for today's peak, as most storage systems charge during low price periods, which usually coincides with a few hours in the middle of the day (i.e. maximising the margin).

Arbitrarily limiting the output of storage to a slower discharge by defining a time factor to the entire plant undermines this flexibility and profitability of the facility through a technical limitation. This can all be dealt with through the LTESA contractual arrangements e.g. a facility can build a 2MW 4MWh storage facility, but contract 1 MW through LTESAs at whatever timeframe is required, as informed by a combination of market modelling (e.g. ESOO) and the requirements of funding (EII Act, CIS etc).

The EUAA does not support the legislative and regulatory changes to the EII Act proposed in the Consultation Paper. Instead, we propose a different model that retains stability for investors and still meets the requirements of the EII Act, consumers and the NEM.

RESPONSE TO CONSULTATION QUESTIONS

1. What is an appropriate minimum duration for long duration storage infrastructure for 2030?

The Consultation Paper is the first time that any examination of the NEM has suggested that 63% of USE occurs for 4 hours or less, leading to the conclusion that up until 2030, 4h LDS will be suitable. This in itself is a biased perspective of the model outputs, as the model also demonstrates that 80% of USE will be 5h or less, or 91% is 6h or less. This modelling "different" outcome is probably due to the Consumer Trustee modelling NSW as separate to the NEM and that the model stops at 2030, while other models take into account the inter-connectedness of the NEM and that life exists beyond 2030. We consider that it would be short-sighted to change the EII Act to require 2GW of 4h LDS just after Eraring closes, and just before other coal fired fleets will be retired from the NEM (requiring longer duration storage).

As a way forward, an appropriate "mix" of short and long duration storage could well be defined in each round of LTESA LDS tender in order to meet the medium-term requirements, as informed by a combination of market modelling (e.g. ESOO) without changing the EII Act. This also provides confidence to the long duration storage

developers that require years to plan, garner approvals and investment commitment and build, such as hydro or compressed air etc.

Changing the EII Act now will see those developers and investors look elsewhere, as the introduced sovereign risk is perceived to be too great to guarantee that the investment will be profitable. Government needs to send the right signals for investment, particularly those with long lead times. The current proposal to change the EII Act LDS requirements sends the wrong signal to investors.

We do not support changing the current 2GW, 16GWh EII Act LDS requirement to 2GW, 8GWh.

2. Should the Minister have regulation making powers to change the minimum duration storage infrastructure over time?

The EUAA does not support the Minister having regulation making powers to change minimum LDS for the same reasons as we do not support changing the current 2GW, 16GWh EII Act LDS requirement to 2GW, 8GWh.

Ministers change, Governments change. This power will be viewed by the private sector as high sovereign risk for investment in LDS in NSW.

3. How can the infrastructure objectives and LDS tenders be improved to support a diverse range of long duration storage projects?

It is our belief that the EII Act Infrastructure Objectives should not be changed. However, LDS tenders could require a mix of storage durations, as informed by a combination of market modelling (e.g. ESOO) without changing the EII Act. This could be at the technical level, however it would be far more efficient to implement at the contractual level.

Are new measures required, such as:

- **Requiring the Consumer Trustee to explicitly consider the benefits of duration in calculating financial value to consumers**

If the Consumer Trustee were to explicitly consider the benefits of duration in calculating net benefit to consumers, then we would expect that the Consumer Trustee would calculate this on the basis of real-world operating models, and not the biased approach of calculations based entirely on the maximum technical output capacity

- **Requiring the Consumer Trustee to discount the capacity of projects with duration less than 8 hours (if allowed) as though the duration is 8 hours when calculating financial value to consumers.**

As above, we would expect the Consumer Trustee to use real-world operational models. By virtue of its design, an 2MW 4MWh battery is also a 2MW 8MWh, 2MW 12MWh or 2MW 16MWh depending on how it is operated. Just like any power system, storage can also be throttled in its output. In calculating the net value to consumers, the Consumer Trustee must use the intended operational model e.g. fast recharge, slow release could be a valid contractual operational model.

- **Establishing a minimum LDS objective for 2035 to provide more certainty for proponents with long lead time projects.**

The EUAA supports establishment of incremental targets for years between now and the net zero NEM. However, these must be based on valid whole-of-NEM models that extend beyond the target date.

4. Should the NSW Government introduce amendments to the LDS definition to clarify it can include aggregated LDS across multiple sites? Should aggregated LDS infrastructure need to register on AEMO's NEM Registration and Exemption List and participate in central dispatch?

The NSW Government does not need to "amend" the LDS definition for "clarity", instead it can provide this clarity within the LDS tender documentation. We do not oppose aggregated LDS being included in meeting the EII Act LDS target. In fact, distributed LDS may prove to be more beneficial to consumers than single, larger LDS facilities, particularly when connected to the distribution network at locations with known constraint and/or high levels of solar-rooftop.

If the combined aggregated LDS (operated in much the same way as VPP) meets the threshold for registration through AEMO, then we believe they ought to be registered. This also provides an additional level of transparency for Government to promote meeting its targets.

CONCLUDING REMARKS

We believe that there exists a better methodology to achieve both the NSW Government and EII Act requirements without legislative or regulatory changes. We recommend that NDCCEEW reconsider the Consultation Paper in light of our proposed ways forward, without creating unnecessary sovereign risk that will stifle NSW's transition to net zero.

Do not hesitate to be in contact should you have any questions.

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